

**IN THE CLAIMS**

1-2. (Cancelled).

3. (Currently amended) The **ingot process** of claim 4 37 wherein the regions in which crystal lattice vacancies are the predominant intrinsic point defects have a radius,  $R_{vac.}$ , extending from the axis of the ingot towards the lateral surface which is at least about 50 % of the radius,  $R$ , of the constant diameter portion of the crystal.

4. (Currently amended) The **ingot process** of claim 4 37 wherein the regions in which crystal lattice vacancies are the predominant intrinsic point defects have a radius,  $R_{vac.}$ , extending from the axis of the ingot towards the lateral surface which is at least about 90 % of the radius,  $R$ , of the constant diameter portion of the crystal.

5-8. (Cancelled).

9. (Currently amended) The **ingot process** of claim 4 46 wherein the ratio of  $L_{vac.}/L_{int.}$  is at least about 0.23.

10. (Cancelled).

11. (Currently amended) The **ingot process** of claim 4 46 wherein the ratio of  $L_{vac.}/L_{int.}$  is at least about 0.17.

12. (Cancelled).

13. (Currently amended) The **ingot process** of claim 4 46 wherein the ratio of  $L_{vac.}/L_{int.}$  is at least about 0.14.

14. (Cancelled).

15. (Currently amended) The ingot process of claim 4 46 wherein the ratio of  $L_{vac.}/L_{int.}$  is at least about 0.12.

16. (Cancelled).

17. (Currently amended) The ingot process of claim 4 46 wherein the ratio of  $L_{vac.}/L_{int.}$  is at least about 0.1.

18. (Cancelled).

19. (Currently amended) The ingot process of claim 4 46 wherein the ratio of  $L_{vac.}/L_{int.}$  is at least about 0.08.

20. (Currently amended) The ingot process of claim 4 37 wherein each of the regions region(s) in which silicon self-interstitial atoms are the predominant intrinsic point defects have an axial length,  $L_{int.}$ , which is at least about 25% of the radius,  $R$ , of the constant diameter portion of the crystal.

21. (Cancelled).

22. (Currently amended) The ingot process of claim 4 37 wherein each of the regions region(s) in which silicon self-interstitial atoms are the predominant intrinsic point defects have an axial length,  $L_{int.}$ , which is less than about twice the radius,  $R$ , of the constant diameter portion of the crystal.

23. (Cancelled) The process of claim 22 wherein the effective dwell time,  $t_{dw-}$ <sub>eff.</sub>, is less than about 85% of the dwell time required to allow a sufficient quantity of silicon self-interstitial atoms to diffuse to the surface of the ingot only to suppress the

concentration of silicon self-interstitial atoms below a critical concentration required for agglomerated intrinsic point defects to nucleate, in an ingot wherein silicon self-interstitial atoms are the predominant intrinsic point defect throughout the entire constant diameter portion of an ingot.

24. (Currently amended) The ingot process of claim 4 37 wherein each of the regions region(s) in which silicon self-interstitial atoms are the predominant intrinsic point defects have an axial length,  $L_{int.}$ , which is about equal to radius,  $R$ , of the constant diameter portion of the crystal.

25-27. (Cancelled).

28. (Currently amended) The ingot process of claim 4 37 wherein the length of the constant diameter portion of the ingot,  $L$ , is at least about 400 mm.

29. (Currently amended) The ingot process of claim 4 37 wherein the length of the constant diameter portion of the ingot,  $L$ , is at least about 600 mm.

30. (Currently amended) The ingot process of claim 4 37 wherein the length of the constant diameter portion of the ingot,  $L$ , is at least about 1000 mm.

31. (Currently amended) The ingot process of claim 4 46 wherein the constant diameter portion of the ingot comprises  $N_{vac.}$  is at least about 2-vacancy dominated regions.

32. (Currently amended) The ingot process of claim 4 46 wherein the constant diameter portion of the ingot comprises  $N_{vac.}$  is at least about 4-vacancy dominated regions.

33. (Currently amended) The ingot process of claim 4 46 wherein ~~the constant diameter portion of the ingot comprises  $N_{vac}$ , is~~ at least about 6 vacancy dominated regions.

34. (Currently amended) The ingot process of claim 4 46 wherein ~~the constant diameter portion of the ingot comprises  $N_{vac}$ , is~~ at least about 8 vacancy dominated regions.

35-36. (Cancelled)

37. (Currently amended) A single crystal silicon ingot having a central axis, a seed-cone, an end-cone, and a constant diameter portion between the seed-cone and the end-cone having a circumferential edge lateral surface, and a radius,  $R$ , extending from the central axis to circumferential edge lateral surface, and an axial length,  $L$ , the single crystal silicon ingot, after being grown and cooled from the solidification temperature, having a constant diameter portion comprising multiple axially symmetric regions alternating along the axis of the ingot between a region wherein vacancies are the predominant intrinsic point defect and a region wherein interstitials are the predominant intrinsic point defect, the ingot having at least 2 interstitial dominant regions which are substantially free of agglomerated interstitial defects separated by a vacancy dominant region along the axis of the constant diameter portion of the ingot, wherein the radius of the constant diameter portion of the ingot is at least about 75 mm.

38. (Currently amended) The ingot of claim 37 having a radius of at least about 100 mm ~~or greater~~.

39. (Original) The ingot of claim 37 having a radius of at least about 150 mm.

40. (Currently amended) The ingot of claim 37, wherein ~~the length of the constant diameter portion of the ingot L~~ is at least about 400 mm.

41. (Currently amended) The ingot of claim 37, wherein ~~the length of the constant diameter portion of the ingot L~~ is at least about 600 mm.

42. (Currently amended) The ingot of claim 37, wherein ~~the length of the constant diameter portion of the ingot L~~ is at least about 800 mm.

43. (Currently amended) The ingot of claim 37, wherein ~~the length of the constant diameter portion of the ingot L~~ is at least about 1000 mm.

44-45. (Cancelled).

46. (New) The ingot of claim 37 wherein the multiple axially symmetric regions alternating along the axis of the ingot comprises  $N_{vac}$  vacancy dominated regions and  $N_{int}$  silicon self interstitial dominated regions, wherein  $N_{vac}$  is at least 1 and  $N_{int}$  is at least 2, the vacancy dominated regions each having an axial length,  $L_{vac}$ , and a radius,  $R_{vac}$ , extending from the axis of the ingot towards the lateral surface which is at least about 10% of the radius,  $R$ , of the constant diameter portion of the crystal, the silicon self-interstitial dominated regions each having an axial length,  $L_{int}$ , and a radial width which is equal to the radius,  $R$ , of the constant diameter portion of the silicon single crystal